

FIG. 1

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STAMPS

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|           | Subbands  |           |           |           |           |           |           |           |           |            |            |            |            |            |            |            |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|
|           | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10         | 11         | 12         | 13         | 14         | 15         | 16         |
| Antenna 1 | $X_{1,1}$ | $X_{1,2}$ | $X_{1,3}$ | $X_{1,4}$ | $X_{1,5}$ | $X_{1,6}$ | $X_{1,7}$ | $X_{1,8}$ | $X_{1,9}$ | $X_{1,10}$ | $X_{1,11}$ | $X_{1,12}$ | $X_{1,13}$ | $X_{1,14}$ | $X_{1,15}$ | $X_{1,16}$ |
| Antenna 2 | $X_{2,1}$ | $X_{2,2}$ | $X_{2,3}$ | $X_{2,4}$ | $X_{2,5}$ | $X_{2,6}$ | $X_{2,7}$ | $X_{2,8}$ | $X_{2,9}$ | $X_{2,10}$ | $X_{2,11}$ | $X_{2,12}$ | $X_{2,13}$ | $X_{2,14}$ | $X_{2,15}$ | $X_{2,16}$ |
| Antenna 3 | $X_{3,1}$ | $X_{3,2}$ | $X_{3,3}$ | $X_{3,4}$ | $X_{3,5}$ | $X_{3,6}$ | $X_{3,7}$ | $X_{3,8}$ | $X_{3,9}$ | $X_{3,10}$ | $X_{3,11}$ | $X_{3,12}$ | $X_{3,13}$ | $X_{3,14}$ | $X_{3,15}$ | $X_{3,16}$ |
| Antenna 4 | $X_{4,1}$ | $X_{4,2}$ | $X_{4,3}$ | $X_{4,4}$ | $X_{4,5}$ | $X_{4,6}$ | $X_{4,7}$ | $X_{4,8}$ | $X_{4,9}$ | $X_{4,10}$ | $X_{4,11}$ | $X_{4,12}$ | $X_{4,13}$ | $X_{4,14}$ | $X_{4,15}$ | $X_{4,16}$ |

FIG. 2A

Time

|           | Subbands  |           |           |           |           |           |           |           |           |            |            |            |            |            |            |            |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|
|           | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10         | 11         | 12         | 13         | 14         | 15         | 16         |
| Antenna 1 | $X_{1,1}$ | $X_{1,2}$ | $X_{1,3}$ | $X_{1,4}$ | $X_{1,5}$ | $X_{1,6}$ | $X_{1,7}$ | $X_{1,8}$ | $X_{1,9}$ | $X_{1,10}$ | $X_{1,11}$ | $X_{1,12}$ | $X_{1,13}$ | $X_{1,14}$ | $X_{1,15}$ | $X_{1,16}$ |
| Antenna 2 | 0         | $X_{2,1}$ | $X_{2,2}$ | $X_{2,3}$ | $X_{2,4}$ | $X_{2,5}$ | $X_{2,6}$ | $X_{2,7}$ | $X_{2,8}$ | $X_{2,9}$  | $X_{2,10}$ | $X_{2,11}$ | $X_{2,12}$ | $X_{2,13}$ | $X_{2,14}$ | $X_{2,15}$ |
| Antenna 3 | 0         | 0         | $X_{3,1}$ | $X_{3,2}$ | $X_{3,3}$ | $X_{3,4}$ | $X_{3,5}$ | $X_{3,6}$ | $X_{3,7}$ | $X_{3,8}$  | $X_{3,9}$  | $X_{3,10}$ | $X_{3,11}$ | $X_{3,12}$ | $X_{3,13}$ | $X_{3,14}$ |
| Antenna 4 | 0         | 0         | 0         | $X_{4,1}$ | $X_{4,2}$ | $X_{4,3}$ | $X_{4,4}$ | $X_{4,5}$ | $X_{4,6}$ | $X_{4,7}$  | $X_{4,8}$  | $X_{4,9}$  | $X_{4,10}$ | $X_{4,11}$ | $X_{4,12}$ | $X_{4,13}$ |

FIG. 2B

212

Time



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|           | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10         | 11         | 12         | 13         | 14         | 15         | 16         | Subbands |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|----------|
| Antenna 1 | $x_{1,1}$ | $x_{1,2}$ | $x_{1,3}$ | $x_{1,4}$ | $x_{1,5}$ | $x_{1,6}$ | $x_{1,7}$ | $x_{1,8}$ | $x_{1,9}$ | $x_{1,10}$ | $x_{1,11}$ | $x_{1,12}$ | $x_{1,13}$ | $x_{1,14}$ | $x_{1,15}$ | $x_{1,16}$ | 212      |
| Antenna 2 | 0         | 0         | $x_{2,1}$ | $x_{2,2}$ | $x_{2,3}$ | $x_{2,4}$ | $x_{2,5}$ | $x_{2,6}$ | $x_{2,7}$ | $x_{2,8}$  | $x_{2,9}$  | $x_{2,10}$ | $x_{2,11}$ | $x_{2,12}$ | $x_{2,13}$ | $x_{2,14}$ | 214      |
| Antenna 3 | 0         | 0         | 0         | $x_{3,1}$ | $x_{3,2}$ | $x_{3,3}$ | $x_{3,4}$ | $x_{3,5}$ | $x_{3,6}$ | $x_{3,7}$  | $x_{3,8}$  | $x_{3,9}$  | $x_{3,10}$ | $x_{3,11}$ | $x_{3,12}$ | $x_{3,13}$ | 213      |
| Antenna 4 | 0         | 0         | 0         | 0         | 0         | $x_{4,1}$ | $x_{4,2}$ | $x_{4,3}$ | $x_{4,4}$ | $x_{4,5}$  | $x_{4,6}$  | $x_{4,7}$  | $x_{4,8}$  | $x_{4,9}$  | $x_{4,10}$ | $x_{4,11}$ | 215      |

FIG. 2C

Time



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|           | Subbands  |           |           |           |           |           |           |           |           |            |            |            |            |            |            |            |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|
|           | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10         | 11         | 12         | 13         | 14         | 15         | 16         |
| Antenna 1 | $X_{1,1}$ | $X_{4,2}$ | $X_{3,3}$ | $X_{2,4}$ | $X_{1,5}$ | $X_{4,6}$ | $X_{3,7}$ | $X_{2,8}$ | $X_{1,9}$ | $X_{4,10}$ | $X_{3,11}$ | $X_{2,12}$ | $X_{1,13}$ | $X_{4,14}$ | $X_{3,15}$ | $X_{2,16}$ |
| Antenna 2 | $X_{2,1}$ | $X_{1,2}$ | $X_{4,3}$ | $X_{3,4}$ | $X_{2,5}$ | $X_{1,6}$ | $X_{4,7}$ | $X_{3,8}$ | $X_{2,9}$ | $X_{1,10}$ | $X_{4,11}$ | $X_{3,12}$ | $X_{2,13}$ | $X_{1,14}$ | $X_{4,15}$ | $X_{3,16}$ |
| Antenna 3 | $X_{3,1}$ | $X_{2,2}$ | $X_{1,3}$ | $X_{4,4}$ | $X_{3,5}$ | $X_{2,6}$ | $X_{1,7}$ | $X_{4,8}$ | $X_{3,9}$ | $X_{2,10}$ | $X_{1,11}$ | $X_{4,12}$ | $X_{3,13}$ | $X_{2,14}$ | $X_{1,15}$ | $X_{4,16}$ |
| Antenna 4 | $X_{4,1}$ | $X_{3,2}$ | $X_{2,3}$ | $X_{1,4}$ | $X_{4,5}$ | $X_{3,6}$ | $X_{2,7}$ | $X_{1,8}$ | $X_{4,9}$ | $X_{3,10}$ | $X_{2,11}$ | $X_{1,12}$ | $X_{4,13}$ | $X_{3,14}$ | $X_{2,15}$ | $X_{1,16}$ |

Time

FIG. 3A

|           | Subbands  |           |           |           |           |           |           |           |           |            |            |            |            |            |            |            |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|
|           | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10         | 11         | 12         | 13         | 14         | 15         | 16         |
| Antenna 1 | $X_{1,1}$ | 0         | $X_{3,3}$ | $X_{2,4}$ | $X_{1,5}$ | 0         | $X_{3,7}$ | $X_{2,8}$ | $X_{1,9}$ | 0          | $X_{3,11}$ | $X_{2,12}$ | $X_{1,13}$ | 0          | $X_{3,15}$ | $X_{2,16}$ |
| Antenna 2 | $X_{2,1}$ | $X_{1,2}$ | 0         | $X_{3,4}$ | $X_{2,5}$ | $X_{1,6}$ | 0         | $X_{3,8}$ | $X_{2,9}$ | $X_{1,10}$ | 0          | $X_{3,12}$ | $X_{2,13}$ | $X_{1,14}$ | 0          | $X_{3,16}$ |
| Antenna 3 | $X_{3,1}$ | $X_{2,2}$ | $X_{1,3}$ | 0         | $X_{3,5}$ | $X_{2,6}$ | $X_{1,7}$ | 0         | $X_{3,9}$ | $X_{2,10}$ | $X_{1,11}$ | 0          | $X_{3,13}$ | $X_{2,14}$ | $X_{1,15}$ | 0          |
| Antenna 4 | 0         | $X_{3,2}$ | $X_{2,3}$ | $X_{1,4}$ | 0         | $X_{3,6}$ | $X_{2,7}$ | $X_{1,8}$ | 0         | $X_{3,10}$ | $X_{2,11}$ | $X_{1,12}$ | 0          | $X_{3,14}$ | $X_{2,15}$ | $X_{1,16}$ |

Time

FIG. 3B

Time

|           | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10         | 11         | 12         | 13         | 14         | 15         | 16         | Subbands |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|----------|
| Antenna 1 | $x_{1,1}$ | 0         | $x_{3,3}$ | 0         | $x_{15}$  | 0         | $x_{3,7}$ | 0         | $x_{19}$  | 0          | $x_{3,11}$ | 0          | $x_{13}$   | 0          | $x_{3,15}$ | 0          |          |
| Antenna 2 | 0         | $x_{1,2}$ | 0         | $x_{3,4}$ | 0         | $x_{16}$  | 0         | $x_{3,8}$ | 0         | $x_{10}$   | 0          | $x_{3,12}$ | 0          | $x_{14}$   | 0          | $x_{3,16}$ |          |
| Antenna 3 | $x_{3,1}$ | 0         | $x_{3,3}$ | 0         | $x_{3,5}$ | 0         | $x_{17}$  | 0         | $x_{3,9}$ | 0          | $x_{11}$   | 0          | $x_{3,13}$ | 0          | $x_{15}$   | 0          |          |
| Antenna 4 | 0         | $x_{3,2}$ | 0         | $x_{3,4}$ | 0         | $x_{3,6}$ | 0         | $x_{18}$  | 0         | $x_{3,10}$ | 0          | $x_{12}$   | 0          | $x_{3,14}$ | 0          | $x_{16}$   |          |

FIG. 3C

Time

|           | 1         | 2         | 3         | 4         | 5        | 6        | 7        | 8        | 9        | 10       | 11       | 12 | 13       | 14       | 15 | 16 | Subbands |
|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|----------|----------|----------|----------|----|----------|----------|----|----|----------|
| Antenna 1 | $x_{1,1}$ | 0         | 0         | 0         | $x_{15}$ | 0        | 0        | 0        | $x_{19}$ | 0        | 0        | 0  | $x_{13}$ | 0        | 0  | 0  |          |
| Antenna 2 | 0         | $x_{1,2}$ | 0         | 0         | 0        | $x_{16}$ | 0        | 0        | $x_{10}$ | 0        | 0        | 0  | $x_{14}$ | 0        | 0  | 0  |          |
| Antenna 3 | 0         | 0         | $x_{3,3}$ | 0         | 0        | 0        | $x_{17}$ | 0        | 0        | $x_{11}$ | 0        | 0  | $x_{15}$ | 0        | 0  | 0  |          |
| Antenna 4 | 0         | 0         | 0         | $x_{3,4}$ | 0        | 0        | 0        | $x_{18}$ | 0        | 0        | $x_{12}$ | 0  | 0        | $x_{16}$ | 0  | 0  |          |

FIG. 3D

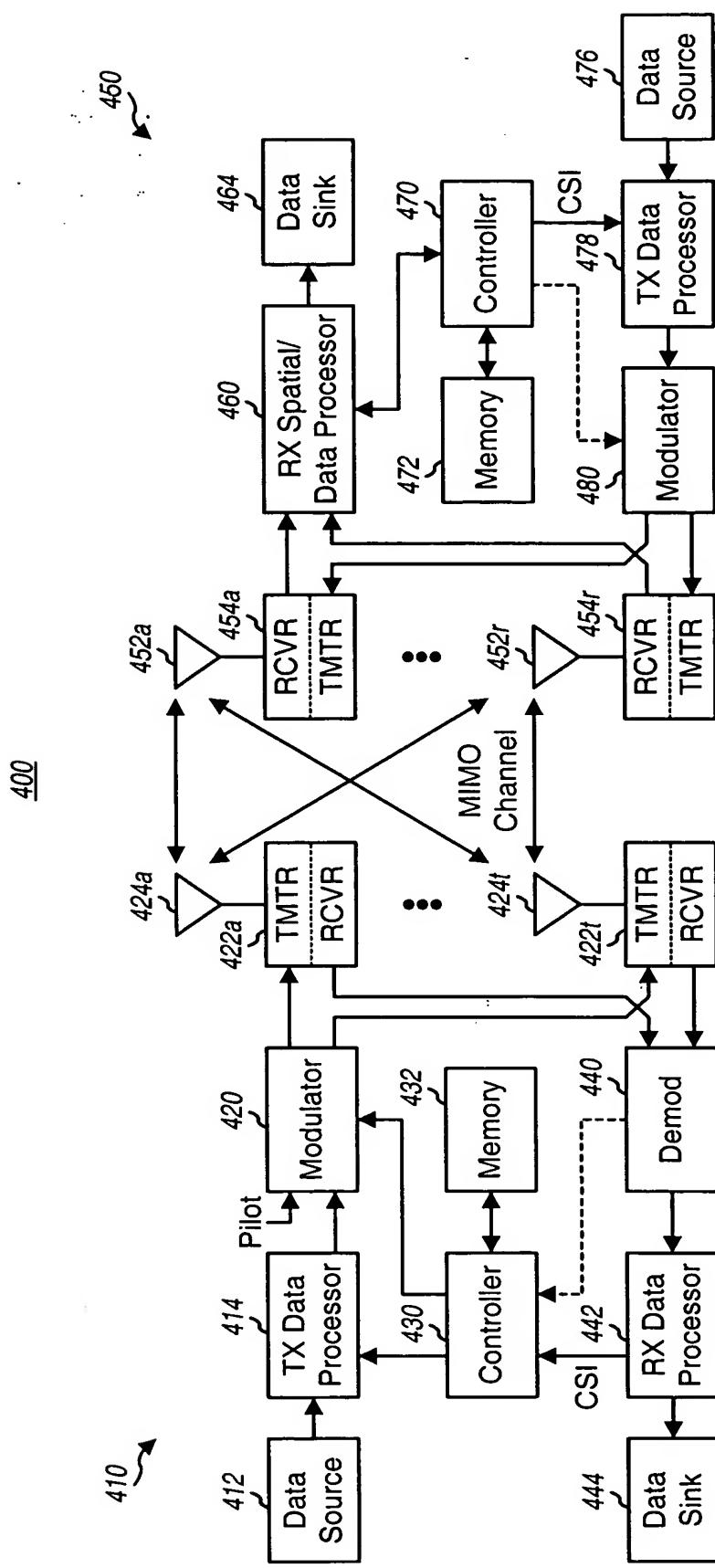


FIG. 4

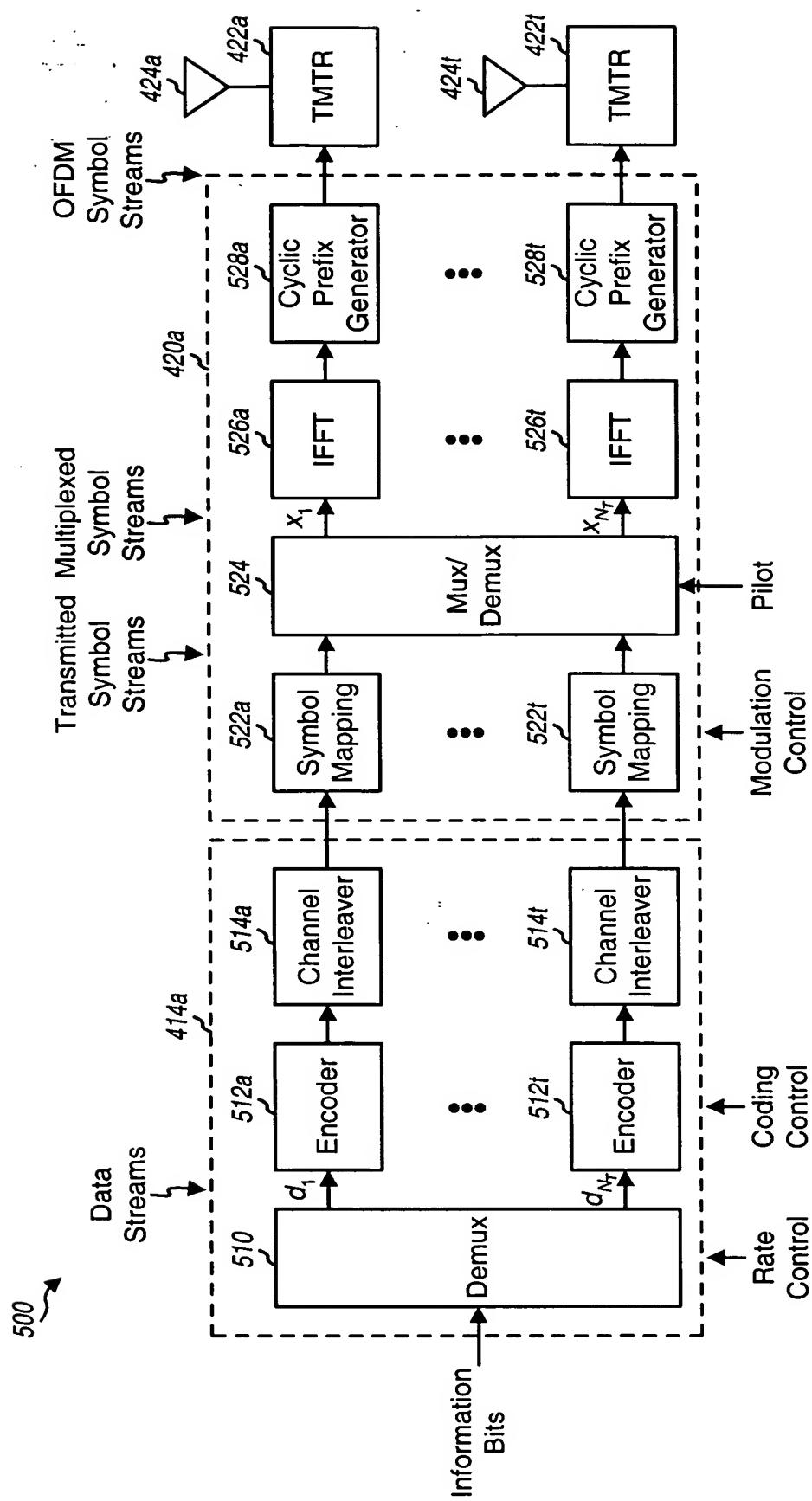
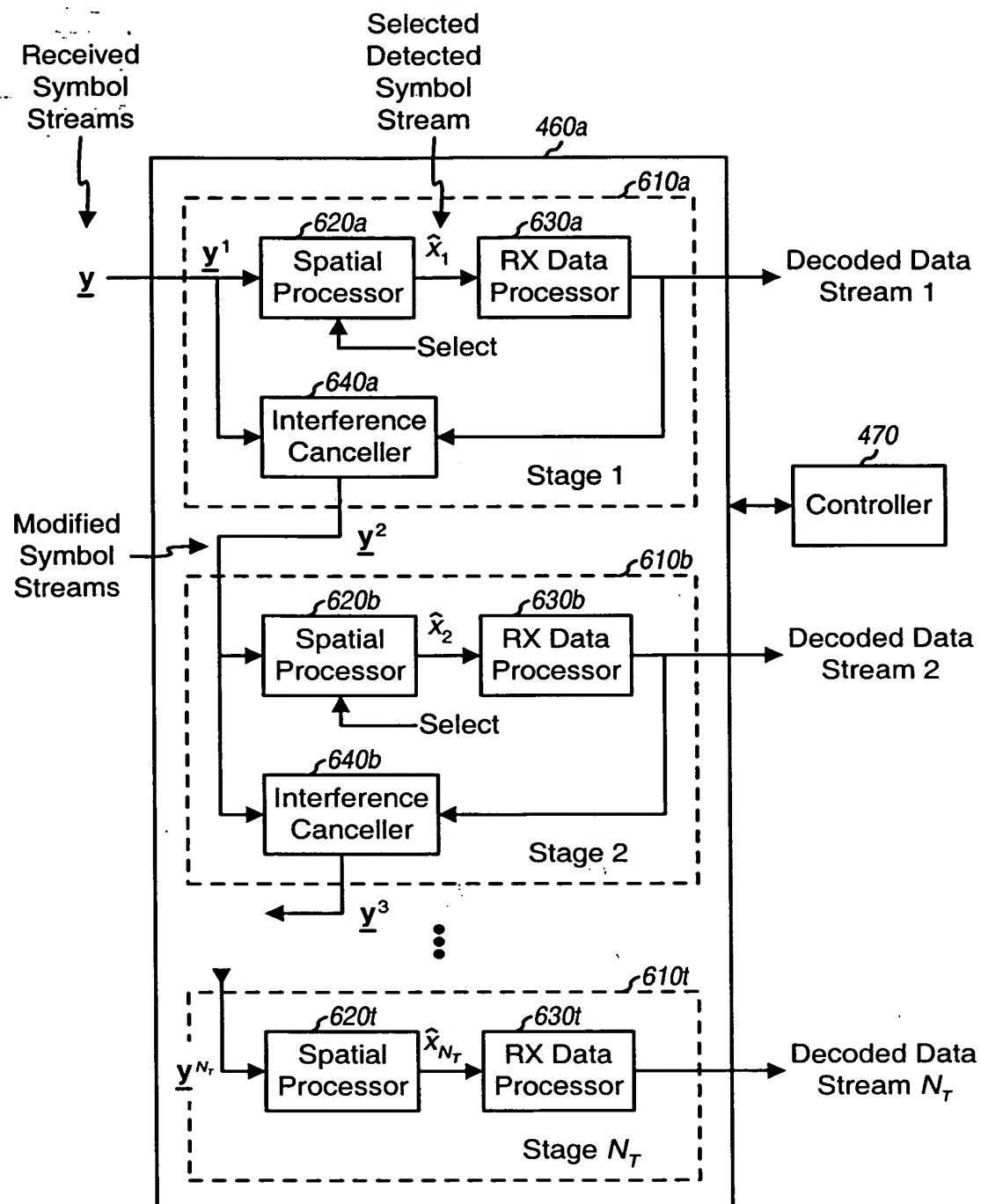


FIG. 5

**FIG. 6**